needed to induce firms to self-select in an open market.[6] I therefore find it natural to think of an auction process as the means for selecting the carriers of last resort, and for determining the support level.

My priors are that the value of enhanced ex post competition that option 3 would permit is likely to outweigh any possible inefficiency that may be created, relative to option 2, by supporting multiple COLRs. Ideally, the number of COLRs would be determined endogenously through the auction process, rather than determined in advance by the regulator. The auction would also determine which firms should serve as COLRs, and what the level of support, per customer, should be.

### 3) Elements of a Universal Service Plan

Before discussing the auction process itself, I will first fill in some of the basic elements of the framework in which the auction might be employed.

First, I suggest that the regulator should determine what it expects carriers of last resort to do. It should publish a clear list describing the obligations a COLR would undertake. This would include such items as the definition of the basic service package the COLR must provide, a ceiling on the price to be charged, any other requirements as to terms and conditions, quality standards, tariffing requirements, resale obligations,

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6 I have used the term "support" to describe the side payment, because it is a usefully bland term without another economic meaning. I have avoided calling it a "subsidy" because it has nothing to do with whether the basic local service is being subsidized in the economic sense. If economies of scale and scope are large, the range of rates which are subsidy-free might be quite large. This does not mean that the firm would be indifferent with respect to where in the range the rate is set. Conversely, the rate the regulator chooses may be within the subsidy-free range, or it might not. It really doesn't matter. The issue is whether or not there has been a market intervention, and what payment is needed to compensate for that intervention -- not whether a subsidy exists in the economic sense.

and so on.[7] In itself, this process would be an important step in the transition from traditional regulation of the incumbent, since it would transform universal service from a sometimes ill-defined function that the incumbent performs under pervasive regulation to a specific function that could be assigned to any carrier(s). In effect, the list would serve as the basis for a Request for Proposal, or bill of particulars, that bidders would respond to. For this purpose, the regulator should also specify a time period for the COLR responsibility -- effectively the term of the contract the successful bidders would be entering into with the regulator. This would be necessary for firms to prepare their bids, and for the regulator to know commitment it was buying from the carriers.

Support would be provided to each COLR on a per-customer basis. Each COLR in an area would be obligated to serve any customer that chose it. COLRs would thus be forced to compete among themselves, and the distribution of support would be determined by the customers in selecting their carriers. When a customer switched providers, the support would be portable, if the new carrier was also a COLR.

Second, the regulator should develop cost estimates to serve as a basis for estimating initial levels of support. At the outset, the support the incumbent receives, per customer, in each area would be the difference (where positive) between the cost

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[7] The 1996 revision to the Telecommunications Act establishes a link between an obligation to serve and the receipt of universal service funding. It defines an "eligible" carrier ("Eltel") as one that commits to serve a given area, and to advertise its price. I believe that the Act gives ample scope for state and federal regulators to flesh out the details of these requirements, just as it leaves other implementation specifics to those regulators. In any event, an obligation to serve would mean little if the price were not specified; if the carrier were free to vary its price, it could still target only the customers it wished to serve, while ostensibly standing ready to serve everyone.

measure and the price ceiling set by the regulator. This is necessary because, at the outset, in many areas there will not be firms willing to bid for the carrier of last resort function. The cost-based approach would serve as an alternative means of determining support.

The cost-based approach would attempt to estimate the market intervention in the carrier's price. However, even if it could do this well, it would not be able to capture any other factors which might affect a carrier's willingness to serve as a COLR. These might include any nonprice requirements imposed as part of the list published by the regulator, such as quality standards. They could also include any relevant complementarities, of demand or supply, with other services. Finally, they could simply include the difficulty the firm expects in dealing with the regulator. The bidding process, if successful, could put a price tag on any such factors in a way that a cost model cannot.

In fact, a number of models have been developed to estimate local service costs, by small geographic area for universal service purposes. For the reasons I have just mentioned, I believe that such models are necessary. However, the experience with these models has shown that they are difficult to develop, and the subject of considerable controversy. For example, I have been spending a good deal of time recently in California, where the public utilities commission will soon be selecting a cost model for use in its universal service plan. After many months of workshops, hearings, and legal briefs, we have managed to narrow down the range of estimates for the size of the fund. The low estimate is zero; the high estimate is 1.7 Billion dollars. This experience suggests that it would be a mistake to think of these cost models as precision tools. Each party has proposed cost estimates influenced by its own interests, leaving the commission with a wide range of discretion in selecting the fund size it will find to be "sufficient". Further, as the Commission in California is beginning to appreciate, any change over time in cost levels, technology, or the definition of the basic service[8] would require new models to be developed, and the contentious regulatory process to be repeated. An auction approach offers remedies for the deficiencies of the cost approach. It would provide a mechanism for correcting errors in the initial cost estimates. It would require a firm wishing to influence the support amount to submit a bid, which would represent a binding offer to actually perform for that amount, rather than simply to hire a consultant to say what the incumbent's costs should be. I believe that this is a more promising approach for the regulator to induce firms to reveal their true cost expectations.

An auction would also remove from the regulator the discretion to set the support amount; the regulator would set the COLR requirements, and the firms, through the bidding process, would set the support. This would impose a certain discipline on the regulator, since it would know, when it set the requirements, that it would not be able to escape the funding need those requirements would imply. Finally, bidding would provide a means for the plan to adapt over time, without the need to update cost models.

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[8] The 1996 telecommunications Act requires the FCC to review the basic service definition periodically to determine if newer or more advanced functions should be added.

Third, where firms have entered the market and are willing to bid to become carriers of last resort, a mechanism could be established to initiate bidding processes in those areas. The results would supersede the cost-based approach. In areas which were not nominated for bidding, the cost-based support would continue. I will discuss the design of an auction for this purpose below.

Fourth, the plan should raise the necessary funds through a minimally distorting mechanism. In principle, since universal service is a broad policy goal, there is a good argument for funding it from general revenues. As a practical matter, the next best approach is a sector-specific contribution mechanism which would be applied symmetrically to all telecommunication providers. I suggest a surcharge on all retail transactions for telecommunications services. This surcharge, like an excise tax, would avoid double-counting transactions at the wholesale level. By putting a specific charge on customer's bills, it would allow customers to see what they are contributing toward universal service. It would also avoid any asymmetry that might result from a "tax" that carriers would have to recover through their own service rates, when the incumbent's rates are still regulated, while entrants' rates are not.

Fifth, the funds received by each incumbent should be applied toward offsetting reductions in rates for other services which are contributing implicit support for universal service today. This would leave the incumbent with the same total revenue, but a price vector closer to a competitive market outcome.

There are several inconsistencies in the incumbents' rates that a universal service mechanism can help to address

- The first is the obvious one: the difference between the local rate the regulator finds "affordable" and the market rate for the service. The funding mechanism allows the subscriber to see the affordable rate, while the carrier sees something like a market rate -- the sum of the rate the customer pays and the support. This is necessary to allow correct price signals to prospective local carriers.
- The second rate anomaly is the fact that some service prices may have been set at artificially high levels to support universal service; the offsetting reductions proposed here would help bring these rates closer to where they should be. By adjusting access rates downward, this approach would also help to align them more reasonably with other rates for interconnection to the LEC's network.
- The third problem with rates is that of reconciling the rates for unbundled elements with the rate for the local service package. If the package rate is set below market, then it will not be possible to choose market-level rates for the unbundled elements which will sum to the package price. In this case, again, the universal service support provides the necessary degree of freedom. The COLR is the entity that buys inputs at market prices (whether the COLR "makes" these inputs with facilities of its own, or "buys" some of them as unbundled elements) and turns them into output in the form of the package at the socially desired price. The support payment is the element that makes this possible; it also assures that each carrier, whether it is a COLR or not, faces undistorted prices in its "make or buy" decision.

**Certificate of Service**

I, Ann D. Berkowitz, hereby certify that copies of the foregoing "GTE's Comments in Response to Questions" have been mailed by first class United States mail, postage prepaid, on August 2, 1996 to all parties of record and the Federal-State Joint Board.

Ann D. Berkowitz